(No. 55)



PARLIAMENT OF TASMANIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Green Skills Centre of Excellence

Presented to His Excellency the Governor pursuant to the provisions of the Public Works Committee Act 1914.

MEMBERS OF THE COMMITTEE

Legislative Council

Mr Harriss (Chairman) Mr Hall House of Assembly

Mr Best Mr Green Mrs Napier

2009

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INTRODUCTION

To His Excellency the Honourable Peter George Underwood, Officer of the Order of Australia, Governor in and over the State of Tasmania and its Dependencies in the Commonwealth of Australia.

MAY IT PLEASE YOUR EXCELLENCY

The Committee has investigated the following proposal: -

Green Skills Centre of Excellence – Tasmanian Skills Institute Campus, Alanvale Road, Launceston

and now has the honour to present the Report to Your Excellency in accordance with the *Public Works Committee Act 1914*.

SUBMISSION OF THE DEPARTMENT OF EDUCATION (TASMANIAN SKILLS INSTITUTE)

Location

The proposed location is essentially a green fields site located within the campus of the Tasmanian Polytechnic Alanvale adjacent to the Tompsons Lane entry.

Two existing sheds within this area will be redeveloped as part of the new building.

POLICY AND PLANNING INITIATIVES

Addresses National Priorities

The Green Skills Centre for Excellence (GSCE) will incorporate some of the ideals of the Tasmania Tomorrow Legislation. The Tasmanian Polytechnic is the key government-funded provider to post year 10 students and adult learners, working alongside its sister organisation the Tasmanian Skills Institute that focuses on skills development for employees in enterprises.

The GSCE will centre on the Draft VET Sector Sustainability Policy and Action Plan, which is structured around the four inter-dependent priority directions for advancing sustainability in the VET sector;

- Workforce development: building the knowledge and skills for a low-carbon economy;
- **VET sector products and services:** incorporating environmental sustainability and innovation capabilities in VET products and services;
- Leaders, partnerships and champions: enabling leadership to support environmental sustainability through VET;
- **Reducing VET sector carbon footprint:** creating an environmentally friendly VET sector.

Our plan, between the two organisations, is to deliver national cohesiveness and consistency in effort and performance; each priority direction is therefore supported by actions for VET stakeholders. The actions are directed at ensuring that industry,

individuals and the wider community have access to relevant skills and VET services to support a productive and prosperous economy as we make a national shift towards a lower carbon, environmentally-sustainable economy.

The Premier and Minister for Education and Skills on 27th November 2008 launched Tasmania's first-ever comprehensive skills strategy aimed at meeting the State's current and future skill needs in terms of quantifiable performance measures and targets, namely:

- increase year 12 completion or equivalent by 5% per annum;
- increase the proportion 15-64 year olds with Certificate III and above skills/qualifications to 43% by 2010 and 49% by 2015; and
- increase the proportion of 15-64 year olds enrolled in education or training to 18.9% by 2010 and 20% by 2015.

This infrastructure project, adopting these ideals, will assist in attainment of the targets of the Productivity Working Group of the Council of Australian Governments. The GSCE facility will assist in enabling the skilling and up-skilling in traditional trade Certificate III levels (introductory units) currently not delivered in the region such as bricklaying, plastering, tiling and painting etc. These clients travel long distances to Hobart and the mainland to receive training.

The Building Act 2000 (introduced in 2004), required existing builders (Building Practitioners) to gain accreditation in order to continue business. New entrants (builders) require Certificate IV in Building in order to gain accreditation. The new Centre will provide opportunities for Cert III apprentices to articulate into Cert IV at the same location.

New components of Learning for Sustainability will incorporate approaches such as mentoring, facilitation, action learning etc, thereby assisting in shifting traditional ways of thinking and acting on environmental problems for the construction and furnishings trades.

Incorporating 5-Star standard plant and equipment into the GSCE will enable practical demonstrations to learners on what is sustainably achievable, as well as achieving career-long learning.

Economics

The GSCE is designed to address short and long-term adaption of changing community and industry needs. Inbuilt flexibility provides the Institutes with significant economies, including:

- adjustable room sizing;
- adaptable exhaust systems;
- programmed lighting to minimise energy demands and provide reconfiguration options to suit area size and use;
- adaptable ablutions to allow gender-matching to enrolments;
- expansion consideration beyond the current footprint;
- flexibility to partition the facility for future disparate use;
- safe, functional layout which engenders responsible use; and

• facilities that make provision for sustainable waste management through on-site reuse and off-site recycling.

Environmental

The GSCE will be developed within a sustainable framework utilising the Green Building Council's Education Assessment Tool to achieve a 5 Star rating, which is classed as showing Australian Excellence. This will provide a facility with excellent environmental outcomes, especially in the areas of:

- energy consumption;
- water usage;
- waste minimisation;
- environmental emissions; and
- transportation.

Social

The new facility presents an overall increase in workshop area and larger individual work areas. This mitigates current overcrowding, while addressing the diverse use of the facilities between the Tasmanian Skills Institute and the Tasmanian Polytechnic.

Currently, no common space exists to address lunchtime separation from the work, or the overlap between student movements, affecting safety and hygiene. The new facility addresses these shortcomings.

It satisfies projected increases in student numbers by including improved workshops, common areas and ablutions. The increased space allows the GSCE to adapt to the community and industry sector's changing needs for niche skill development without impacting overall teaching programs and increasing numbers of trained apprentices.

The facilities provide many benefits that promote efficient use of the GSCE technical resources, including:

- locating all learning at one campus close to students and facilities, significantly reducing travel times;
- improving materials-handling arrangements to free up valuable staff time and reducing possible injury points that affect injury time;
- centralising administration and staff common areas to improve student/teacher interaction; and
- centralising records, HR, copiers, and data files.

Alignment with strategic direction and aspirations

This infrastructure project aligns strongly with the goals of the highly-innovative and ground-breaking Tasmania Tomorrow reforms which have set up two new Vocational Educational & Training institutions: the Tasmanian Polytechnic and the Tasmanian Skills Institute, which, together, replace the former TAFE Tasmania.

The purpose of the Polytechnic is to prepare students (including Year 11 & 12 students) for industry-aligned careers through a focus on applied learning and vocational qualifications. It is vitally important to the students that the vocational teaching and learning is highly credible with employers through relevant and leading

teaching and learning facilities and resources that are matched to the workplace and, importantly, the emerging workplace.

The Tasmanian Skills Institute has a mission of working with employers and their employees to lift productivity at enterprise and State level through workforce skills development. This is achieved principally through apprentice training and strong engagement with the existing workers. The Skills Institute must not only reflect best industry practice but lead in areas of important change.

An emerging and strong trend in the construction and allied trades is the take-up of skills and knowledge to meet the challenges of climate change and sustainable practices. The awareness of green skills is high in the region due to the leadership of some outstanding architectural and consulting engineering practices.

In particular, the Skills Institute, in partnership with employers, has the challenge of engaging the large existing workforce in increasing the number of qualifications for existing workers and gaining skills in sustainable practices and technologies. This career-long learning is a vital aspect of the Skills Institute's work.

The project will also support the COAG and Tasmanian Government Skills Strategy goals to increase the proportion of Tasmanians (15 - 64) enrolled in Vocational Education and Training (public system) from its current level of 13.3% to 14.6% in 2010 and 16% in 2015.

The Green Skills Centre of Excellence will be the hub for career preparation training, apprentice training and the engagement of the existing workforce in skills development by creating a shift in the thinking and practice of this large and important industry sector as it adapts to the needs of climate change.

Establishment of this new state-of-the-art, environmentally-intelligent GSCE building will not only provide Tasmanian industries with a training facility of genuine value, but will support the initiation and development of environmental enhanced education and training of the next generation of trades people – the future of our industries. With a building designed and working as an operationally and environmentally safe (machinery, dust and noise tolerant), astute (using a wide range of recyclable opportunities and resources) and friendly (low to no carbon omissions), this will be a model for the building and its operations will be available for training and researching new environmental initiatives using wood/timber as its primary material resource. It will be a beacon for these sectors of construction and manufacturing industries.

THE TASMANIAN CURRICULUM FRAMEWORK

Summary

Construction and Allied Trades including Furnishings training in Launceston are currently delivered from two campuses, 7km's apart. Thynes campus is on the fringe of the city and Alanvale campus in the northern suburbs. Thynes is no longer fit-forpurpose and split campuses are difficult to operate and administer. The objective is the construction of a new state-of-the-art GSCE to facilitate the relocation of all programmes from split campuses.

This project will introduce and implement Green Technology, not only in infrastructure and fabric of the new building, but also in the training of Construction and Allied Trades including Furnishings, changing attitudes and work practices of the workforce in the northern region of Tasmania.

Description

This infrastructure project has been funded to establish, build and commission a stateof-the-art training facility in line with the National VET Sector Sustainability Policy and Action Plan (2009-2012) for a combination of Construction and Allied Trades, Joinery and Furnishings industries on a green field site at the Alanvale Campus, Launceston.

Current training facilities for both sectors operate from a pre-WW2 textile factory on the fringe of the Launceston fringe CBD, last modified 30 odd years ago. In many aspects it does not comply with current best practices despite several attempts to improve functionality. Relocation of this training sector will consolidate all traditional trade skills training on a single site in Launceston; benefiting apprentices and students generally through services, student support and facilities such as student residences, cafeteria, library, common areas and support for disadvantaged and nontraditional groups which is not available at the current city location.

In line with *Tasmania Tomorrow* directions and government policy, the new GSCE facility will be co-jointly used by two organisations, the Tasmanian Polytechnic (providing entry level construction and furnishings trade training for senior secondary students – years 11 and 12) and the Tasmanian Skills Institute for underpinning knowledge and simulated workplace training (where workplace assessment is unavailable).

The Tasmanian Skills Institute will provide apprentice training for the Northern and North Eastern Tasmania regions in Construction – Carpentry & Joinery and Allied Trades and also in Furnishing Industries (hard sector) state-wide. This will incorporate Cabinet Making, Wood Machining, Kitchens & Bathrooms, Furniture Finishing and Upholstery (including sail making and other TCF options).

Qualifications which will be offered from this facility include:

Tasmanian	Skills		Institut	e	_	Co	onstruction
(289 Contracts of T	raining as	6 @ Feb	o 2009)				
69857		Cert	III	in	Carpentry	&	Joinery
BCG20103		Cert	II		General	Co	onstruction
BCG30203		Cert		III	in		Carpentry
BCG30303		Cert		III	in	(Concreting
BCG30803		Cert I	II in Ro	of Tili	ng		
Tasmanian	Skills		Institu	te	—	F	furnishings
(131 Contracts	s of	Tra	aining	as	. @	Feb	2009)
LMF20202		Cert	II	in	Furnitu	re	Finishing

LMF20302	Cert	II	i	n Furnitui	e Making
LMF20802	Cert		II	in	Upholstery
LMF30202	Cert	III	iı	n Furniture	e Finishing
LMF30302	Cert	III	i	in Furnitu	re Making
LMF30402	Cert	III in F	urnitu	re Making (Ca	abinet Making)
LMF30502	Cert	III in Fu	urnitu	re Making (W	ood Machinist)
LMF31002	Cert		III	in	Upholstery
LMF31102	Cert	III	in	Production	Upholstery
LMF32109	Cert	III	in	Cabinetmaking	/Kitchens &

Bathrooms

Tasmanian	Skills	Institu	ite	_	Industr	y T	raining
(190 Bookings	and Expressi	ons of In	terest as	@ Feb 2	009)		
BCGC	O3001B		Perform	ı		D	ogging
BCGR	I3002B	Perform	n	Rig	gging		Basic
BCGR	I3002B	Perform	n	Riggin	ıg	Intern	nediate
BCGS	C2002B		Erect &	& Disma	ntle So	caffolding	Basic
BCGC	M3003B		Implem	ent Traf	fic M	anagemen	t Plan
BCCCI	M2013B		Control	Traffic	with	Stop/Slov	w Bat
BCGC	M3001B		Elevate	d	Work	Pla	atforms
BCGD	E3002B		Encapsu	ulate an	d Re	move A	sbestos
CPCCC	DHS1001A		Industry	/ Safety 1	Inductio	on – Whit	e Card
BCG40	0106	Post	Trade,	Cert	IV	in B	uilding
		Wood	Turning				-

Tasmanian (74 students in training) Polytechnic

BCG20103	Cert	II	In	General	Construction		
LMF10102	Cert		Ι	in	Furnishing		
LMF20103	Cert II	Cert II in Furniture Making					

Tasmanian Skills	Institute - New	Opportuniti	es (with	the GSCE)
BCG40106	Cert IV in Bu	uilding & C	Constructio	n (Building)
	Green Building	for Introd	uction to	Employees
	Green Star	– Related	d to	Construction
	Industrial	Green	Star	Training
	Residential	Green	Star	Training
Manufacturing Green Star Training				

Note: The following table is indicative of strong growth in the Northern region of Tasmania particularly related to apprenticeship (CoTs) in both Construction and Furnishings sector trades.

	Constructi	on (C&J)	Furnishings	8	Entry	Const	Furn
	New CoT'	All CoT's	New CoT's	All CoT's	Training	Total	Total
						CoT's	CoT's
Year							
2005	18	18	18	78	33	36	96
2006	68	232	22	122	60	90	354

2007	84	248	35	123	65	119	371
2008	119	282	49	134	70	168	416
2009	As at	289		131	74		420
	of Februar						
		2009 specific industry training places 190					
		Clients sch	Clients scheduled for training during 2009				

Meeting Social Inclusion Agenda

Tasmania has an ageing workforce and low levels of labour-force participation. There is a strong demand for skilled people and limited numbers especially outside urban centres. There is also a growing need to expand the workforce into groups that have been disengaged. The predominate disadvantage involves rurality where students are required to travel long distances to undertake trade related training.

The recently-implemented *Tasmania Tomorrow* reforms which established one VET provider operating through the State, able to operate independently of external controls while at the same time working in partnership with the Tasmanian Skills Institute, Industry, Skills Tasmania and other development agencies, has seen a successful response in current conditions.

The Tasmanian Polytechnic will have a major role in facilitating Certificate II outcomes, particularly in traditional trade areas, through strong links with the Tasmanian Skills Institute. The Polytechnic will provide pre-vocational pathways for students that will articulate to Certificate III at Tasmanian Skills Institute. This integrated model will provide students with a clear, streamlined pathway to trade occupations.

The Polytechnic will work alongside is sister organisation, the Tasmanian Skills Institute, which will focus on skills development for employees in enterprises, including full time apprentices. A particular strength of courses for year 10 leavers and adults at the Polytechnic is the fact that students will have a high level of practical and applied learning, driven by a workplace context and leading to employment.

The positive partnership between the Tasmanian Skills Institute and the Tasmanian Polytechnic through sharing of infrastructure will ensure the best learning for both apprentices, furnishings and construction industry employees and years 11 and 12 senior-secondary students wishing to gain employment in the Construction and Allied Trades and Furnishings industries.

In structuring our training and assessment, social inclusion is imperative with our learning design and support mechanisms, as specified with the *Tasmania Tomorrow* strategies.

Positive impact on enhancing capacity

Management of Tasmania's VET system, particularly in apprenticeship trades, is strongly influenced by the State's unique characteristics, which include:

- a broad, diverse and highly dispersed enterprise base;
- generally conservative, honourable and genuinely committed industries servicing a small and dispersed population;

- predominantly small-to-medium size businesses; and
- a learning desire for environmental sustainability for their industries.

Tasmania also has an ageing workforce, particularly in traditional trades, with relatively low levels of labour-force participation in training.

Positive impacts which this infrastructure project will have are:

- opportunities for increased industry involvement
- state-of-the-art learning facilities to accommodate Carpentry and Joinery plus Allied Trades (construction industry) including Furnishing industries (manufacturing based) state-wide training for trades apprentices;
- establishment of a working integration between two areas of the Tasmanian Government's *Tasmania Tomorrow* initiative; the Tasmanian Polytechnic and the Tasmanian Skills Institute in one location, alleviating duplication of additional infrastructure, amenities and services;
- consolidation of all traditional trades on to a single site, eliminating the on-going need to service, support and maintain an annexe which is:
 - in need of a major upgrade (facilities, plus plant and equipment),
 - creating major problems for the organisation related to inappropriate work flow through design inadequacies; and
 - more importantly, does not comply with contemporary WH&S standards regarding noise, dust, natural light and heating and cooling.
- Construction of a state-of-the-art environmentally friendly building, a Green Skills Centre of Excellence (GSCE), an exemplary model for Construction and Allied Trades including Furnishings.

These, and associated positive impacts, will provide the Commonwealth and State with a world-class learning structure through infrastructure design, construction, operation and training, whilst driving attitudinal change towards a 'Green Economy' supported by a 'Green Collar' workforce, teaching and learning 'Green Skills'.

The impact this project shall have on the capacity of our Institutes to service clients in areas of potential world-class learning will be exceptional, particularly with Green Star related awareness and training. It will also provide opportunities for post-trade training in Certificate IV and beyond for young construction employees (post apprenticeship) to become registered, as this is a minimum requirement of the Building Act 2000.

This infrastructure project is aligned directly to the following industries:

- <u>Construction</u> Carpentry, Joinery, Carpentry & Joinery, Off-Site Construction, General Construction, Materials Handling and Concreting
- <u>Allied Trades (entry level)</u> Bricklaying, Plastering, Floor Finishing, Plumbing, Domestic and Commercial Gas, Painting, Glazing, Sign-writing and Tiling

• <u>Furnishings</u>

Cabinet Making, Furniture Making, Kitchens and Bathrooms, Furniture Finishing, Upholstery and related TCF occupations

Small to medium size businesses which predominantly operate in regional Tasmania have demands for quality training of apprentices (via the Skills Institute) and preemployment/entry level training for post year 10 students (via the Polytechnic). In addition, there is strong demand for skills development, safe operations and environmentally-sustainable training.

Green Skills training for apprentices, our future trades people and existing employees is paramount to shift work places attitudes and culture of these industries. Companies who openly support and promote skills development, safe operations and environmental sustainability include some of Tasmania's leading construction and furnishings industries employers, including, but not limited to,:

- Fairbrother Pty Ltd
- Vos Constructions & Joinery Pty Ltd
- Rossiter Homes and Development
- Hinman, Wright & Manser and
- Dickens Construction

These companies have vocally supported the need for a GSCE in northern regional Tasmania. They have offered willing and on-going support.

Establishment of the GSCE infrastructure project at Alanvale campus adjacent to the current construction (out-door) training area would positively:

- transform knowledge generation and teaching capacity for both trade apprentices through the Tasmanian Skills Institute and years 11 & 12 entry level trade students through the Tasmanian Polytechnic;
- boost participation in tertiary education by providing adequate, safe and environmentally friendly learning facilities, enhanced by *Tasmania Tomorrow* government initiative to increase retention of students up to 18 years of age.
- position Australia (particularly Tasmanians) to meet domestic skill needs in these skill shortage trades, now and into the future;
- enhance Australia's innovative capacity and practices through construction of an environmental class 5 Green Star building as an exemplary model of industry best practice a beacon for their future; and
- enrich learning by adopting the environmental building concept 'Green Economy' through embedding 'Green Skills' into teaching and learning for 'Green Jobs' in the construction joinery, carpentry and allied trades (including furnishings).

The principle impact of this GSCE infrastructure initiative will genuinely assist to advance our development and delivery of world-leading tertiary education and trade skills training to enhance the capacity of our industry sectors, resulting in a safe, effective, efficient and productive workforce for the future. The positive operational impact will produce a state-of-the-art, world class centre of excellence for construction and allied trades plus furnishings training for Polytechnic (years 11 and

12 tertiary students) along with Skills Institute (trade apprentices and existing industry employees) in a purpose built Green Star – Level 5 learning facility (GSCE) at one location.

BUILDING OVERVIEW

The new development will be a state of the art training facility built to the latest technological standards.

The existing facility does not comply with current best practice despite several attempts to improve functionality. This new facility will address these issues as well as consolidating traditional skills training on a single site in Launceston.

The consolidation will allow the appropriate level of support to be given to those who may be disadvantaged or nontraditional student groups.

The building has been designed to work as an operationally and environmentally safe (machinery, dust and noise tolerant) astute (using a wide range of recyclable opportunities and resources) and friendly (low volatile organic compound) materials. This will be a model for the building /furnishings industry. The building and it's operations shall be available for training and researching new environmental initiatives using wood and timber as it's primary material resource.

The building and environs are to be constructed under the Green Building Councils Australia's guidelines addressing environmental and waste management plans, indoor environmental quality, energy efficiency, smart lighting, transport considerations, potable water efficiency, material selection, emissions and land use ecology. The design will incorporate solar design principals as well as natural ventilation.

The facility is to be developed within a sustainable framework. The Green Building Council Education assessment tool will be used as a tool to achieve as high a green star rating as is possible within the constraints of the budget and availability of materials. Using this green star philosophy the facility will provide a substantially better environmental outcome.

Feature Include

Energy Consumption-Reduction in lighting and energy consumption from current levels

Water usage-Recycling of rain water through the toilets and irrigation system

Waste minimization-Reduction through direct on site reuse and waste segregation for off site recycling

Natural lighting levels will be increased to reduce the need for electric lighting and linked to automatic controls to maintain safe working levels

MACHINERY

The machinery has been carefully selected to provide state of the art equipment that will provide best practice for training but also energy achieve efficiency.

FUNCTIONS

The functions have been split into two primary areas. Internal or undercover training and external training area.

The lower level of the main building consists of the following areas:-

- Entry
- General learning areas
- Workshops
- Deliveries and storage
- Noise and dust workshop
- Spray booth
- Drying Room
- Chemical storage
- Grinding and sharpening room
- Student common Room
- First Aid and cleaning
- Staff office
- Student toilet facilities
- Lift

Upper level of the main building:

- Reception
- Staff work area
- Interview room
- Team leader office
- Waiting area
- Unit Leader office
- Resource area
- Staff toilet facilities
- Staff offices
- Multi purpose facilitation room
- Tea making and server room
- General learning areas
- Computer Labs
- Upper level workshops
- Mezzanine storage area
- Archive storage
- External Training Area
- Sandpit
- Workshop
- Storage areas
- Waste management room
- Bulk Store
- External Raw store
- Riggers Framing area

CONSTRUCTION

Environmentally Sustainable Development Strategies

Construction Methodology

The proposed buildings may be considered as follows:

- The building will have reinforced concrete slabs and footings;
- The main structure consists of a steel portal frame system with steel girts;
- Infill wall framing will be timber or concrete blockwork;
- The roof cladding will be colourbond custom orb;
- Wall cladding will be a combination of metal cladding, cement sheet and exposed aggregate precast wall panels;
- Roof will be fully insulated with R 3.5 to roofs ceilings external walls with acoustic insulation to internal walls;
- Window frames will be powdercoated aluminum frame with 10.38mm laminated glass;
- Internal walls will be lined with Medium Density Fibreboard;
- Extensive use of glass will be used to maintain visual connection between spaces and aid in supervision;
- Floor finishes includes epoxy sealer to concrete slabs, rubber, carpet and ceramic floor tiles.
- Building Services and Structure

Power Supply

- The existing substation is 750KVA and is satisfactory for reuse;
- The existing substation LV Switchboard will need to be replaced; and
- All distribution boards to be provided with residual current device (RCD) protection.

Lighting

- Majority of all lighting to consist of either T5 fluorescent, compact fluorescent fixtures and high bay light in the large workshop spaces;
- Luminaries will be operated by motion sensor and only operate when rooms are occupied;
- In areas where there is significant natural light, light sensors are used to when lights can be used;
- Feature light fixtures to be incorporated for highlighting architectural or landscape elements;
- External lights to provide general lighting around the building controlled via photo-electric cell and clock; and
- Emergency lights will be installed in locations as required.

Fire Detection System

The fire sub and indicator panel will be located in the front entrance and connected back to the main panel in block A;

The proposed fire services shall comprise the following systems;

- Smoke detection system serving offices and classrooms etc;
- Smoke detectors will be located in all rooms and ceiling spaces where required by the standard;
- Heat detectors protecting rooms which might be subject to spurious alarms if smoke detectors are installed, such as cleaner's rooms or toilet areas;
- A Fire Indicator Panel controlling smoke and heat detectors and building occupant warning facilities will be located in the administration area or Student Services building in the main lobby;
- Interconnection of mechanical services equipment such as mechanical plant shutdown with the Fire Indicator Panel for shut down or control during fire emergencies; and
- A Building Occupant Warning System throughout the building in the form of localised sounders.

The building occupant warning facilities will comprise local sounders which will be ceiling mounted. In the event of a fire alarm, all sounders will simultaneously operate.

Mechanical Services

Interface facilities

• Whenever the fire detection system operates, all mechanical systems, including the ventilation systems for the basement, battery room, etc will be shut down.

Air Conditioning

• Air conditioning for cooling will be avoided wherever possible, with the exception of server room, board rooms and any computer resource rooms, rooms with high density computer layouts, or high occupancy counts with additional thermal load.

Air Filtration

- Central areas have F5 panel filters due to the dust production on the site. Remaining areas have natural ventilation; and
- Unitary dust collectors shall be installed across the space and be activated via occupancy sensors and manual on/off switches to reduce the ingested dust load for the occupants.

Ventilation

- Natural ventilation will be provided to all occupied spaces via open able windows or an opening; and
- Mechanical ventilation will only be provided to toilets and occupied rooms where natural ventilation cannot be otherwise provided.

Heating

- Provided by reverse cycle heat pumps to all areas where possible;
- Building Management System will control the use of heating and cooling as well as the totalisation of energy across the site; and
- There will be a building control system for the whole site, including the integration of the lighting, security and mechanical system control.

Exhaust

• The dust extraction systems shall be provided with blast gates and pressure sensing to minimise power consumption.

Security

- Each building will include stand alone security system located in the Student Services building with the facility to turn off lighting and heating when system is armed;
- Selected external doors will be provided with access control equipment to operate either an electric strike or magnetic lock. Internal doors that are locked will be released via a push button;
- Closed Circuit TV monitoring of outdoor areas spaces will be provided; and
- All security alarms will be operated via the computer system. Security issues to be monitored on site.

Communication/ICT

- Communication will include wireless system for student laptops and hard wire data system for staff;
- Each building will be connected to the server room via a multiple core fibre connection and each will utilise both wired and wireless technologies;
- Each school will have the capacity to use Voice Over Internet Protocol (VOIP) and Fire Over Internet Protocol (FOIP); and
- A public Address system will be included in each building with the console located in the Student Services building.

Structural Design

- Foundation and ground slab; and
- Slab and beam construction.

Wall and roof structure

- Steel columns with Steel girts;
- Concrete Blockwork; and
- Steel lintels.

PROJECT FUNDING

Green Skills Centre of Excellence (Alanvale)

Current Building Estimate	\$ 5,061,800.00
Equipment Budget	\$ 885,000.00
Total	\$ 5,946,800.00

Contingency 3.5% Professional & Planning	Fees	\$ \$	208,138.00 560,738.00
8.32% Post Contract Contingency		\$	21,324.00
Budget Total	\$	6,715,676. 00	
Funding Allocation		\$	6,737,000.00

COST ESTIMATES

The details of the Green Skills Centre of Excellence (GSCE) are as follows:

Element	Cost Estimate (\$)
Building Works	
Buildings	\$4,897,124.00
Landscaping	\$50,000.00
Sub Total	\$4,947,124.00
Site Works and Services	
Site Infrastructure and connections	\$136,000.00
Sub Total	\$136,000.00
Other	
Contingencies & Escalation	\$208,138.00
Fees (total)	\$560,738.00
Furniture and Equipment	\$885,000.00
Sub Total	\$1,653,876.00
TOTAL CONSTRUCTION COST	\$6,737,000.00

EVIDENCE

The Committee commenced its inquiry on Monday, 16 November last with an inspection of the site of the proposed works. The Committee then reconvened in the Conference Room, 4th Floor, Henty House, Launceston whereupon the following witnesses appeared, made the Statutory Declaration and were examined by the Committee in public:-

- Scott Curran, Director, ARTAS Architects
- Terry Powell, Manager Quality and Performance, Skills Institute
- Jack Hansen, Manager Capital Planning- Shared Services
- Mike Van Der Veen, Principal Projects Manager

Background

Mr Curran provided the following overview of the proposed works:-

The building that we're currently working with has been designed to work as an operationally and environmentally safe machinery, dust and noise-tolerant

building, using a wide range of recyclable opportunities and resources, creating a building that has low volatile organic compound materials. It is intended that this building will be a model for the building and furniture industry.

The building and the environs will be constructed under the Green Building Council of Australia's guidelines which will address environmental and waste management plans, indoor environmental quality, energy efficiency, smart lighting, transport considerations, potable water efficiency, material selection, emissions and land use ecology. The design will also incorporate solar design principles as well as utilising natural ventilation. Some of these features will include recycling of rainwater through the toilets and the irrigation system, waste minimisation through direct on-site reuse and waste segregation for offsite recycling, a solar hot water system, and natural lighting levels will be increased inside the building to reduce the need for electric lighting. This lighting will be linked to an automatic control, which will enable us to maintain safe working levels.

The machinery has also been carefully selected to provide state-of-the-art equipment that will provide best practice for us in terms of training, but will also enable us to achieve energy efficiency.

In terms of construction, the building may be considered as follows. The building will have reinforced concrete slabs and footings. The main structure will consist of a steel portal frame with steel girts. Infra-wall framing will be timber or concrete block. The roof cladding will be Colorbond custom orb. Wall cladding will be a combination of metal cladding, cement sheet and exposed aggregate pre-cast wall panels. The roof will be fully insulated with R3.5 to roofs, ceilings, external walls, with acoustic insulation to the internal walls.

Window frames will be powder-coated aluminium frame with 10.38 mm laminated glass. Internal walls will be lined with medium density fibreboard. There will be extensive use of glass throughout the building to maintain visual connection between the spaces and to aid in supervision. The floor conditions will include epoxy sealers to concrete slabs, rubber, carpet and ceramic floor tiles.

The majority of lighting will consist of fluorescents, compact fluorescents or high bay lighting. These lights will be operated by motion sensors and will only operate when the rooms are occupied. It is our aim to achieve a significant level of natural light that gives us the ability to limit the amount of energy we use and light sensors will be used on these. Feature lighting will be incorporated through the architecture and also through landscape elements. External lights will be on sensors or by time control. Emergency lights will be installed as required.

Mechanical services are an important part of this building. They will also interface with the fire detection system, which will operate all the mechanical systems including the ventilation system for the basement and for the compressor rooms. Airconditioning for cooling will be avoided wherever possible with the exception of the server room, the meeting rooms and in any rooms where computers cause high heat loads.

Air filtration - central areas will have F5 panel filters due to the dust protection that was required on the site. Remaining areas will have natural ventilation. Unitary dust collectors have been installed across all of the spaces and will be activated by occupancy sensors with manual on/off switches to reduce the ingested dust load for the occupants. Natural ventilation will be provided wherever possible by openable windows or openings. Mechanical ventilation will only be provided to toilets and occupied rooms where natural ventilation is unable to be provided.

Heating will be provided by reverse-cycle heat pumps. A building management system will control the use of heating and cooling.

Each building will stand alone in terms of the security system, which will be located within the main building. It gives us the ability to turn off the lighting and the heating when the system is armed. Selected external doors will be provided with access control equipment to operate either on electric strike or on a magnetic block. Internal doors that are locked will be released via push button. Closed-circuit TV monitoring of outdoor spaces will also be provided. All security alarms will be operated by the computer system.

Communications and ICT will include a wireless system for student laptops and hard wired data system for staff. Each building will be connected to the server room via a multiple-core fibre connection and each will utilise wired and wireless technology. Each department will have the capacity to use voice over Internet protocol and fire over Internet protocol for the panels. A public address system will also be included in the building.

In terms of the design that we have been looking at for the building, we have striven to keep the design as simple as we can. We have spent a lot of time trying to make the design as simple as we can with the machinery and functions required within the building. We have attempted to keep the workshops open so that we can increase visibility. We have large areas of polycarbonate sheeting that enable us to have access to natural light. We have natural ventilation that comes in through the courtyard areas and we also are able to restrict circulation through the building using this layout that we are proposing to utilise.

This building contains a number of workshops. Within those workshops there are a number of machines. That machinery has been carefully considered in terms of occupational health and safety and also workplace standards. We have a consultant that is advising us on those two elements at the moment to ensure that everything is state of the art and complies with the current guidelines and regulations. The workshops are located on the ground floor and the level that we propose is the level of the existing building at the moment.

We propose to refurbish G23 into a workshop to contain the Polytechnic. G16 will be a new construction but we are hoping to utilise the existing mezzanine floor that is through there at the moment. Entry into the building is via a new colonnade. We have provided a lift in this area that enables disabled access up onto the first level. The reception area will be located on that level as well. This enables us to keep all of the workshops and all the functions associated with those workshops on the ground floor.

Student common rooms are located adjacent to the entry. They are located in this position to enable us to restrict access for students and confine them to this area so that they are not in the workshops unsupervised. Supervision is a really important part of the design and we have tried to keep these workshops as open as we can. Other areas are located within the workshop - noise and dust workshops, spray booths and drying rooms - or adjacent to the workshops so that people do not need leave the workshop area to go and use those noise or dust workshops.

Storage is an important consideration for us, as is delivery to the building. The location of deliveries and storage has been carefully considered to give us easy access, but not to cross over any of the circulation paths that we have provided through the building.

We have broken the building up into a number of smaller elements so that the height of the building can be maintained as low as we possibly can. It is quite a large building, it has a large footprint, but we believe that by breaking it down into the three smaller buildings we have achieved a building that fits nicely into the site and does not overpower any of the existing elements that are there, or the neighbouring houses.

On the first floor we have located all of the staff facilities, staff reception, staff offices, staff toilets, a meeting room and the general learning areas for students as well as the computer lab. The important consideration was for those areas to be able to look out and supervise down into the workshops below. Once again we are trying to utilise the natural lighting, which will be indirect in this case. As you can see from the drawings, there are large areas of glazed screen that separate those workshops from that other area. Essentially at the moment the two storey that goes through that area is the corridor across through to the general learning areas, the staff offices and the reception area.

The building that is currently on site at the moment that we are looking to refurbish contains a sand pit. We are looking to relocate that under-cover area down to the bottom of the site because of the constraints we have on the site, so the functions that are contained within that building will be separated out. That will contain the sand pit and a workshop area, once again with additional storage.

The elevations have been designed so that we do not create a big large tin shed and there are a number of different materials that we have incorporated into the design. Danpalon or polycarbonate wall sheeting will enable us to get large areas of natural light. We have an expressed steel frame, some Colorbond custom wall sheeting and roof sheeting and then we have a combination of precast concrete panels and also cement sheets.

The elevation to the north of the site we deliberately made heavier and more dense to enable us to absorb some acoustics and give us some acoustic separation from the neighbours. That is a combination of precast panels and FC sheeting. The other elevations are made up of the polycarbonate sheet, cement sheet and also metal cladding.

The height of the building at its highest point is approximately 10 metres and goes down to 5.7. The height of the existing building is 5.4 metres. You can see we have increased the height of the building by another 4.55 metres. But, as we said before, we have tried to break that building down so that we do not have a huge area of building across that site.

We are also collecting rainwater off the roof. At the moment they show as 23 000 litres. They have been amended to now be 25 000 litres, so we have a capacity to collect 75 000 litres of water on the site to recycle through the toilets and the irrigation system. The undercover area is also designed to be sympathetic to the existing building; the materials are very similar.

We have also undertaken an acoustic report; that is not included in the information we have handed to you. This has only been completed over the past couple of days. Our acoustic consultant, Mr Greg Pearce from TTM acoustics, has visited the site over the last couple of days and taken acoustic readings from some of the existing machinery that is in the workshops at the moment. A summary of the preliminary investigations indicates the following. The section of the building that contains the woodworking equipment will require openings to be minimised. Although there is a requirement for natural ventilation, consideration should be placed on minimising noise breakout from the machine workshop and locations containing the woodworking equipment. We have

located the majority of the woodworking equipment into the central bay which is GO7 - the machinery workshop. This is a deliberate strategy of ours to place that machinery within the centre of the building so that we have a buffer of two buildings before that noise escapes out of the building.

We have also, with the natural ventilation, turned all of the windows back into the courtyard space, so those windows are facing back in rather than facing out onto the adjoining property. There are no windows in the northern elevation which faces out onto the adjoining property. As I mentioned before that is a combination of pre-cast panels and heavily insulated fibre-cement sheeting.

Materials proposed for the building are suitable for maximising the attenuation of noise emission from the site. This needs to be further considered during design, development and construction,

All the mechanical plant to be installed on site, like the machinery shop extraction system, will be designed to comply with the relevant statutory requirements, which we are currently doing. All mechanical plant should be assessed prior to installation to ensure compliance with the relative statutory requirements, which we are currently in the process of doing as well.

The openings for the building will be fitted with closable doors or windows to allow for further noise reduction, if required, for two surrounding noisesensitive receivers. Once again we are taking that step and we have fitted automatic controls to those windows that will enable us to close them. The implementation of an on-site noise management plan was recommended. The noise management plan will ensure that local residents are supplied with a contact person on site who will be responsible to investigate and resolve any issues that may arise from on-site activities. This approach will also allow disputes to be resolved without the need for formal investigations over minor issues.

Once the building is constructed we have a design contingency within the money at the moment to enable us to add some acoustic controls onto the building if that is required once the building is operational and we find there are some areas that may be causing us a problem.

Mr Powell added:-

Just to give a summary of where we have come from and where we are going to, construction and allied trades, including furniture training in Launceston, is currently being delivered to our two campuses, which are seven kilometres apart. Tourism and hospitality campus is on the fringe of the city and Alanvale campus in the northern suburbs. The former is no longer fit for purpose and split campuses are difficult to operate and administer.

The objective of this construction, the new state-of-the-art building, is to facilitate the relocation of all programs from the split campuses to one. Currently, training facilities for both sectors operate from a pre-World War II textile factory on the fringe of the Launceston CBD, last modified 30 years ago. In many aspects it does not comply with current best practice, despite several attempts to improve functionality. Relocation of the training sector will consolidate all traditional trade skills, training on one single site in Launceston, benefiting apprentices and students generally through services, student support and facilities such as a student residence, cafeteria, library, common areas and support for disadvantaged and non-traditional groups, which is not available on its current city location.

The Tasmanian Skills Institute will provide apprentice training for the north and north-eastern Tasmanian regions in carpentry and construction, including

carpentry, joinery and allied trades, and also in furniture industries for the hardwood sector on a statewide basis. This will incorporate cabinet-making, wood-machining, kitchens and bathrooms, furniture-finishing and upholstery.

Some of the qualification sectors that we will be operating as far as the curriculum goes will be through the Tasmanian Skills Institute and include construction, which will involve carpentry and joinery, general construction, concreting and roof-tiling; and furnishings, looking at furniture-finishing, furniture-making, upholstery, cabinet-making, wood-machining and the new cabinet-making kitchens and bathrooms qualifications.

Also, all our training is industry-based and our commercial opportunities will be along the lines of training, dogging, rigging at different levels, scaffolding, traffic management, controlling traffic with soft slow bats, elevated work platforms, encapsulating and removing asbestos, industry safety induction, and light-car training. We are also considering post-trade areas of Certificate IV in building along with some other skill areas in furniture, which would include wood-turning and so on.

In addition the Tasmanian Polytechnic will be operating at its own facility and they will be operating with Certificate II in general construction, Certificate I in furnishings and Certificate II in furniture making.

I have in the documentation before you the estimates of earlier this year. We anticipated 684 people running through the place. Just prior to the meeting I checked the latest statistics. At this point in time we have 770 students running through the industry, so in fact we probably deflated the figures that were given to you. It is actually larger than that so there is still very strong demand for the construction and allied trades and furniture trades.

Industry feedback

The Committee questioned the witnesses as to what, if any, feedback had been received from the construction industry in relation to the proposed design features. Mr Kirkman responded:-

I have taken the proposal and the drawings to our furniture enterprise reference group and our construction enterprise reference group. Both groups are totally behind it all and think it is a great thing. Most of the members have been through the old facility and a lot of them trained in the old facility; they quite welcome the opportunity for seeing their future apprentices go through a stateof-the-art building. They are totally supportive.

... particularly the machinery part with our furniture. The bulk of the machinery is more aligned with the furnishing trades. We showed them the machinery that we hoped to put in there, and the locations, and they were very supportive. The machinery they could see is state-of-the-art. We are buying quite a lot of new machinery so that their apprentices are getting trained on the most up-to-date modern machinery. Eventually that might flow back through the industries so they start updating their machines as well.

... When we looked at machinery it was not so much what can it do but how safe is it to use. That was one of the main criteria in the selection of it, particularly the training purposes; it was the best we could basically find.

... Some of the machinery has been selected not for its current need but for future-proofing, particularly with a computer-controlled router we hope to get, which has a five-axis head and they are state of the art. We don't quite need it to that point now, but the bulk of the features are there so that is also future-

proofing it. That technology is just starting to come into industry now and we will be at the forefront of that.

Environmentally friendly design

The Committee invited the witnesses to detail the environmentally 'friendly' aspects of the proposed works. Mr Kirkman responded:-

We hope to have two dust extraction systems so that the bulk of the machinery will operate producing solid timber chips that may be open for recycling. It is also separating the MDF dust. Certain machines specifically use MDF and we want to try to separate that from the woodchips so that we don't have issues with the MDF contaminating the other products. That gives us more opportunity then for recycling.

...In the way we do our training there's not that much waste because it goes through re-use wherever we can. The parts get smaller and smaller, particularly in induction programs where we are using only small pieces to do little projects. It is waste minimisation all the time.

... The spray booth we will have in there will go through a water-wall-type filtration system which minimises the amount of odours emanating from it. I don't think there will be a problem with that. It is located in the centre of the building and we have kept that well away from the external neighbouring walls. The extraction is going to be high but it will go through a water filter, plus other filters, first. That is the best type of filtration system we could come up with to minimise fumes, both for inside the building and externally.

Location of computer lab

The Committee questioned the witnesses as to why the computer lab was not proposed to be centrally located. Mr Curran responded:-

... from our point of view the thinking behind the workshops was that the machinery was the important requirement in the workshop and also visibility through the workshop. If we introduced computer labs we do not really have the space downstairs to introduce them there because of the constraint of the site. If we do introduce them that starts to squeeze up the workshop. It starts to make the area around the machines a little bit tighter. From our point of view we basically wanted to remove that out and get that upstairs so that we could keep all of the functions such as the noise and dust workshops, spray booth, all of the things that are critical to the operation of the workshop, down close together, but because of the computer lab it is not critical to that function and can be removed up. Access is quite close to there; they just need to go up the stairs to get up to the next level. They are able to move up and down those stairs quite freely once they are in that workshop area.

Mr Kirman added:-

The computer lab itself is a multi-functional room. It is not just tied to a workshop at any given time. It is small and multi-functional, yes, and it does look down onto the workshops. Regarding supervision, the apprentices are at a different level from the college students. They are there because they want to learn; the boss is paying them so you do not usually have issues with out-ofcontrol students at all. Usually a quick phone call to their boss saying, 'Are you happy for him to be mucking around?', soon sorts it out. So the supervision level is not as great. Having said that, it is nice to have it directly above that big workshop because at certain times there may be students in there that are operating machinery and may have to go upstairs to do some computer work and that teacher can still operate in those two spaces. As a general rule, that computer lab could be used for any reason. Any group could come in there and use it. It is not specifically tied to a workshop.

Use Tasmania timber

The Committee noted that a 'green-star rating' of five is not achievable if Tasmanian timber is used. The Committee questioned the witnesses as to whether this issue was being pursued. Mr Curran responded:-

We are aiming for five but the current rating on the building is four-and-a-half. The green star consultant we are using has done his calculations and we are at four and-a-half at the moment. It would be unlikely that we would get to five star but all of the elements that we have discussed today and all the features that we have in the building will allow us to get to four-and-a-half. There still an issue with the ability to use Tasmanian timber.

... Industry is addressing that at the moment because that still is an issue that we had with one of our tenders. That is about to close and there are a whole lot of implications in terms of availability of the timber and also the additional cost that you have to incur in using that timber.

... Unfortunately what we have to do is ask for non-conforming tender stipulations because of this inability to meet the requirement with the timber. We are still working through that at the moment. I do not have an answer for you today on what that final result is. I am not an expert on this but if we specify a specific material we have to give an opportunity for that material to have an alternative because we are not able to specifically supply that material due to restrictive trade practice. I think probably specifying Tasmanian materials would fall into the same category as that. So as part of our specification that is a normal requirement that we put in, that alternatives can be sourced and offered up.

Demand for services

The Committee questioned the witnesses as to whether any assessment of demographic projections for the services delivered at the facility had been made. Mr Powell responded:-

I'd have to say no; there hasn't been that I am aware of. I would love to know myself. Based on the last three to five years, in the north of the State the numbers of apprentices reached approximately 250 in the construction industry and we are still maintaining those figures. With the economic downturn we expected a reduction but we have somehow maintained that level. Furniture dropped slightly but this year we have trained 130 apprentices in furniture statewide, compared to five years ago when I think we had about 30 across the State. When the boom hit there were over 1 000 apprentices in the State, so from roughly 300 to 1 000. That is the reason we had to re-establish construction training in other areas of the State. It's very positive at this point in time. There is an anticipated slight reduction or flattening of demand. If that occurred we have a facility here that can satisfy the need for many years to come.

In 1990 all carpentry and joinery throughout Tasmania was delivered in Hobart. Up until three to five years ago - I'm not sure of the exact date - it was re-established in the north and on the north-west coast because of huge numbers; it was impossible to deliver that training and maintain it in one region. The industry had a lot to do with the relocation because the method of training has changed a lot. We do a lot of workplace assessments, industry visits and continuously work with industry in that regard. To do that in one location was almost impossible - having people running from Hobart all over the State. Having them in regions is a lot easier to manage and a lot more client-focused.

DOCUMENTS TAKEN INTO EVIDENCE

The following documents were taken into evidence and considered by the Committee:

• Tasmanian Skills Institute - Green Skills Centre of Excellence (GSCE) Alanvale – Submission to the Parliamentary Standing Committee on Public Works, November 2009

CONCLUSION AND RECOMMENDATION

The need for the proposed works was clearly established. The Green Skills Centre of Excellence will provide Tasmanian industries with a state-of-the-art training facility which will support the initiation and development of environmental enhanced education and training facility for the next generation of trades people.

The Committee notes that currently under the Green Five Star criteria, the use of Tasmanian timber is proscribed. The Committee is firmly of the view that every effort should be made to utilise Tasmanian timber in the design and appropriate representations made to ensure the amendment of the rating system to achieve the same.

Accordingly, the Committee recommends the project, in accordance with the documentation submitted.

Parliament House Hobart 21 December 2009 Hon. A. P. Harriss M.L.C. Chairman